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CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

COUNTRY Poland

DATE DISTR. 2 Sept 52

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SUBJECT Main Institute of Coal in Katowice

NO. OF PAGES 3

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PLACE  
ACQUIREDNO. OF ENCLS.  
(LISTED BELOW)DATE  
ACQUIREDSUPPLEMENT TO  
REPORT NO.

DATE OF INFORMATION

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1. The Main Institute of Coal (Główny Instytut Węglowy) was organized in 1945 by Prof. (Im.) Cherepan. This organization was controlled by the Ministry of Mining (Ministerstwo Górnictwa) and supplied information to the coal mines and coal-using plants belonging to the Ministry of Mining and the Ministry of Chemical Industry (Ministerstwo Przemysłu Chemicznego). Until 1949 the Institute occupied buildings in Welnowice [5016N-1901E] and Biskupice [5106N-2257E], but after that time all Institute divisions were moved to a new building in Katowice [5016N-1901E], (a larger town near Welnowice) with the exception of one division which remained in Biskupice.

2. The Main Institute of Coal had four divisions:

- (a) Petrography and Geology of Coal Division (Zakład petrografii i Geologii Węgla)
- (b) Mechanization of Mines Division (Zakład Mechanizacji Górnictwa)
- (c) Mechanical Utilization of Coal Division (Zakład Mechanicznej Przerobki Węgla); director; Dr Tadeusz Łaskowski
- (d) Chemical Utilization of Coal Division (Zakład Chemicznej Przerobki Węgla); Director: Prof. Dr Tadeusz Łaskowski

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3. The Institute was very much interested in the purification of coal, and three of its members, Dr Laskowski, Director of the Mechanical Utilization of Coal Division, Dr (fnu) Korol and Eng (fnu) Mielecki, were engaged in coal purification research [REDACTED].

Because Poland had enough coal and it was comparatively cheap, the Polish Government would have preferred to use coal rather than graphite or tar coke in the production of coal anodes (used in electrical furnaces producing aluminum steel and carbide). But coal used in this manner must have less than six per cent organic ash content, thus the great interest of the Polish Government in producing a coal purified to this degree. Coal with less than six per cent ash content can also be used most efficiently in the production of silicon carbide and in the carbonization of a gas flame.

4. At the Institute, research in coal purification centered around two methods; the Electrostatic Method (research uncompleted as of November 1951) and the Wet Method. In the Electrostatic Method, which had been under study at the Institute since 1950, coal containing a small amount of organic ash was ground and then separated according to the size of the particles. The desired size for experimentation was a piece three tenths to one mm in diameter. These pieces were then processed by the following set of apparatus: a container for coal pieces, a glass tube of about two meters in length, a small fan and an electrostatic chamber. The coal particles were first conveyed in the glass tube by means of an air current, and by friction with the glass were electrified. The amount of electrical charge each particle gave off depended on its chemical composition; the more unalloyed the coal, ie, the smaller its mineral salt content, the stronger was its capacity for being electrified. The electrified coal particles then dropped from the glass tube into a chamber with an electrostatic field of about 50 thousand volts (The coal particles were automatically sorted in this chamber according to their degree of electrification). Thus, several fractions of coal resulted which differed from each other in their grade of purity. Although this method had undergone research at the Institute since 1950, the results were unsatisfactory as of November 1951. In September 1951 the first report of this research work was published in the "Reports of the Coal Industry Institute" ("Prece Gtoewnego Instytutu Weglowegs"). It gave the test results of the electrostatic characteristics of the different components of coal under experiment, and stressed the low cost, no-drying advantages of the proposed method.
5. The Wet Method, the second method of purifying coal, was quite simple. A variety of coal with a low organic ash-content was reduced to small pieces of three to 10 mm in diameter. These pieces were then washed with distilled water and brought to a vibrating table, which separated coal pieces of less than six per cent ash from the others.
6. Prof Blazey Roga, Director of the Chemical Utilization of Coal Department, and Dr (fnu) Jurkiewicz, working independently, developed two new systems for the classification of coal; Prof Roga on the basis of physical and chemical properties of coal, and Dr Jurkiewicz by using equations and chemical analysis. Prof Roga was also interested in research on the structure of coal and coke and conducted numerous experiments on this subject.

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7. The same Dr Jurkiewicz mentioned above designed, with Engr Henryk Zielenski, a production method for the sulphonation of coal. Both men began the production /date unknown/ of ion exchangers in Poland, and [REDACTED] in November 1951 a large plant for this purpose was being planned. Dr Jurkiewicz was also chiefly responsible for the erection of ion exchangers in Argentina and Sweden (both locations unknown). These two factories were using his patent for ion exchangers as of November 1951.
8. Another member of the Institute engaged in noteworthy research was Dr (fnu) Nadzeakiewicz, who was concerned with problems in coking coal. Through his experiments he succeeded in increasing the benzene and toluene output in coke factories, which aroused considerable interest in the Ministry of National Defense (Ministerstwo Obrony Narodowej), since toluene is a raw material used in the production of TNT.
9. Near the Institute's division in Biskupice, a new battery for swelling ovens was built in December 1950 by the Lurgi Co of Frankfurt/Main, Germany. This battery, however, was used only for research. [REDACTED]
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